Centenary Celebrated Sharnbasveshwar Vidya Vardhaka Sangha's

NATIONAL CONFERENCE ON RECENT TRENDS IN ENGINEERING AND MANAGEMENT STUDIES

(NCRTEMS 2022)

DATE: 12th AND 13th APRIL, 2022

VENUE: LINGARAJ APPA ENGINEERING COLLEGE

RTEMS 2022
CONFERENCE PROCEEDINGS

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ORGANIZED BY

SVV SANGHA'S

LINGARAJ APPA ENGINEERING COLLEGE BIDAR

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In Association with

SHARANBASVA UNIVERSITY, Kalaburagi

Sponsored By

IETE and ISTE

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laecrtems2022@gmail.com

This is proceeding of a conference entitled "National Conference on Recent Trends in Engineering and Management Studies RTEMS-2022, at Lingaraj Appa Engineering College, Bidar in Association with Sharnbasva University, Kalaburagi sponsored by IETE and ISTE held on 12th and 13th of April 2022.

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Instruction to authors:
For a paper to be considered for publication it is a pre condition that it is not submitted for publication elsewhere, contains results that are new significant and of interest to a wide section of engineering and science community. Editors may invite papers on special topics of current interest.

Preface

Lingaraj Appa Engineering College, Bidar

(Affiliated to VTU, Approved by AICTE)

As the demand for Engineers and Managers continues to grow, Lingaraj Appa Engineering College is focused on preparing students for the infinite number of opportunities available. Our vision would surely make us the preferred institution in the country and abroad. This makes Lingaraj Appa Engineering College uniquely qualified to provide talented students, the type of board technological education demanded in a rapidly changing world. Our programmes would satisfy the demands of employers that require a balance of rigorous fundamental engineering skills along with management talents in entrepreneurship, leadership, technical communication, team work and global awareness.

ABOUT THE COLLEGE

Lingaraj Appa Engineering College (LAEC) was started in the year 2011, by Poojya Dr. Sharnbaswappa Appaji under the aegis of centenary celebrated Sharnbasveshwar Vidya Vardhak Sangha, Kalaburagi. Our college is located in the serene atmosphere of Gornalli, Bidar in Karnataka. The College has obtained approval from AICTE and is affiliated to Visvesvaraya Technological University, Belagavi to offer and run Electronics and Communication Engineering, Computer Science Engineering, Electrical and Electronics Engineering, Civil Engineering and Mechanical Engineering along with Post Graduates courses of MBA and M. Tech in CSE, VLSI Design & Embedded systems and Machine Design. The Institution has high quality infrastructure and well-equipped laboratories. It frequently organizes Workshops, FDPs and Seminars on advanced technical topics for the enhancement of the faculty and students. Hence, this college emerges with a unique objective of encouraging research and promoting innovation and creativity in all its undergraduate and postgraduate programs. The Campus sprawls across thirteen acres of peaceful and pollution free environment. The facilities provided in the campus includes a Central Library with books of Engineering and Management Studies as required and recommended by the VTU curriculum in adequate number. Preplacement Training, Placements in Top Notch Companies/ Industry, Guest Lectures by experts from Industry, Indoor and Outdoor Games facilities.

ABOUT THE CONFERENCE

The National Conference on "Recent Trends in Engineering and Management Studies - RTEMS-2022" will be held on 12-13 April 2022 at LAEC, Bidar, Karnataka in Blended Mode. RTEMS-2022, is to bring together innovative academics and industrial experts in the field of Engineering Science and Management Studies to a common forum. The Primary goal of the conference is to promote research and developmental activities in the aforesaid fields. Another goal is to promote scientific information interchange between researchers, developers, engineers, students and practitioners working in and around the country.

Chief Patrons

Poojya Dr. Sharnbaswappa Appa

Maha Dasoha Peethadhipati, Sharnbasveshwar Samsthan, Kalaburagi
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Chancellor, Sharnbasva University, Kalaburagi

Matoshree Dr. Dakshayini S Appa

Chairman, Sharnbasveshwar Vidya Vardhak Sangha, Kalaburagi
Member, BOG, Sharnbasva University, Kalaburagi

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Poojya Matoshri Dr.Dakshayini S.Appa
Chairperson, Sharnbasveshwar Vidya Vardhak Sangha
Member of BOG Sharnbasva University

Poojya Chiranjeevi Doddappa Appa
9th Mahadasoha Peethadipatigalu Sharnbasveshwar Samsthaana Kalaburagi.

LINGARAJ APPA ENGINEERING COLLEGE

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Matoshri Godutai Doddappa Appa

Poojya Doddappa Appa
7th Mahadasoha Peethadipatigalu Sharnbasveshwar Samsthaana Founder President Sharnbasveshwar Vidya Vardhak Sangha

Approved By : All India Council for Technical Education (AICTE), New Delhi

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Mahadasohi Shri Sharnbasweshwar

Service to Humanity is service to God.
He, who helps others alone, gets his desires fulfilled.

The Sharnbasva University is named after Mahadasohi Sharnbasveshwar- a mystic saint, a seer with a vision, a savior of mankind and a divine universal teacher. He was one of the greatest humanitarians rarely found in the spiritual history of mankind. He attained divinity by living the way of life called Dasoha. His Dasoha philosophy is based on the precept- "No religion is greater than service; service to humanity is service to God".

Dedicating his life to the service of humanity, Sri Sharnbasveshwar followed Dasoha in all aspects – in healing the moral and spiritual wounds of the toiling and moiling masses, in feeding the poor, wiping the orphan's tears, soothing and guiding the sinner, serving the sick and curing the diseased by his extraordinary blissful spiritual blessings. Sri Sharnbasveshwar demonstrated to the world, both by precept and practice the eternal values and virtues of life, its essential goodness and oneness.

Poojya Dr. Sharnbaswappa Appaji
8th Mahadasoha Peethadhipathigalu, Sharnbasveshwar Samsthaana President, Sharnbasveshwar Vidya Vardhak Sangha Chancellor, Sharnbasva University

Poojya Matoshri Dr.Dakshayini S.Appa
Chairperson, Sharnbasveshwar Vidya Vardhak Sangha Member of BOG Sharnbasva University

Poojya Chiranjeevi Doddappa Appa
9th Mahadasoha Peethadipatigalu Sharnbasveshwar Samsthaana Kalaburagi.

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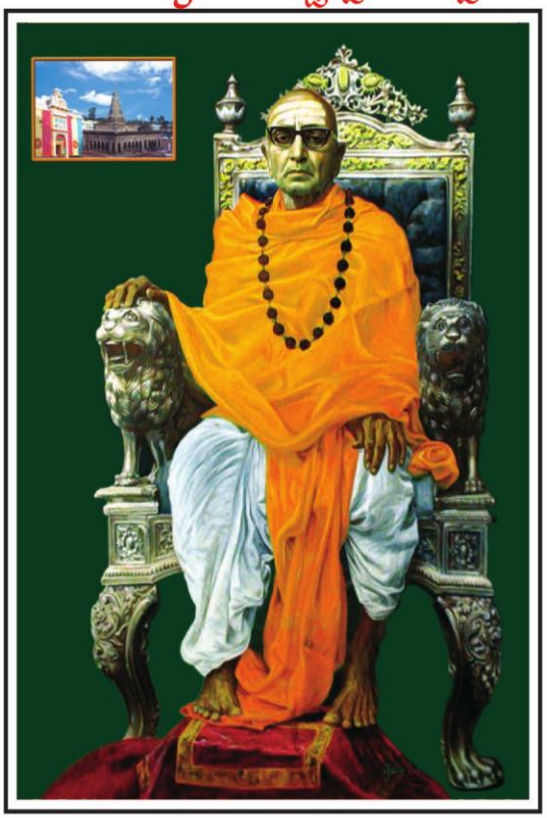

Poojya Doddappa Appa

7th Mahadasoha Peethadhipati,
Sharnbasveshwar Samsthan

Poojya Doddappa Appa has started first Public libarary in 1918 at Kalaburagi initiating the ear of mass education. In 1934 the first girls school in Kannada medium was started i.e. Mahadevi Girls School in Kalaburagi, empowering the women with the power of the knowledge.

In 1951, Poojya Doddappa Appaji, completed the formal registration of the Sharnbasveshwar Vidya Vardhaka Sangha in the then State of Hyderabad. Higher education (UG) started in the areas of Arts, Science and Commerce, in the year 1957.

Poojya Dr. Sharnbaswappa Appaji
8th Mahadasoha Peethadhipathigalu, Sharnbaseshwar Samsthaana
President, Sharnbaseshwar Vidya Vardhak Sangha
Chancellor, Sharnbasva University

Poojya Matoshri Dr.Dakshayini S.Appa
Chairperson, Sharnbaseshwar Vidya Vardhak Sangha
Member of BOG Sharnbasva University

Poojya Chiranjeevi Doddappa Appa
9th Mahadasoha Peethadipatigalu Sharnbasveshwar Samsthaana Kalaburagi.

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Founder President
Sharnbasveshwar Vidya Vardhak Sangha

Approved By : All India Council for Technical Education (AICTE), New Delhi

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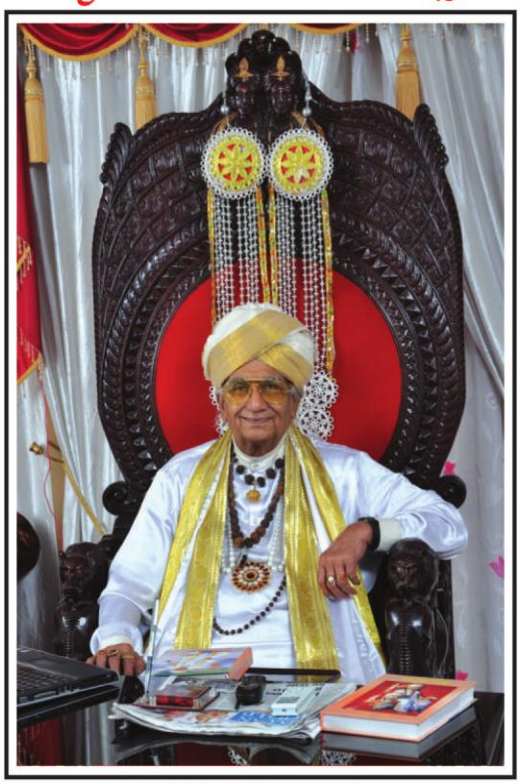

Vidya Bhandari

Poojya Dr. Sharnbaswappa Appa

8th Mahadasoha Peethadhipathi, Sharanbasaveshwar Samsthan
President, Sharnbasveshwar Vidya Vardhak Sangha
President, Akhila Bharata Anubhava Mantapa
Chancellor, Sharnbasva University, Kalaburagi

The Lingaraj Appa Engineering College Bidar in Association with Sharnbasva University is happy & proud to host the National Conference on Recent Trends in Engineering and Management Studies-2022 (RTEMS- 2022) in the college campus on April 12th&13th 2022.

The conference would provide a platform for the experts to explore the recent trends in the Engineering, Sciences, Business Studies, Humanities and throw more light on how these advances would be beneficial to the humankind and make the world a better place to live.

I am happy to note that this Conference has kindled interest among the professionals, academicians, scientists, writers and Media personals to participate in the conference and submit their papers. I welcome all delegates and experts from different universities who have confirmed to participate in the conference and present their papers.

I hope that all the delegates would spend their valuable time and energy in exchanging their ideas and help younger generation to upscale their knowledge and skill.

Best Wishes and Blessings of the Saint Sharanabasaveshwara would always be there on the organizers and all others for the grand success of the the conference. I congratulate the core team organizing the Conference.

Poojya Dr. Sharnbaswappa Appaji
8th Mahadasoha Peethadhipathigalu, Sharnbasveshwar Samsthaana President, Sharnbasveshwar Vidya Vardhak Sangha Chancellor, Sharnbasva University

Poojya Matoshri Dr.Dakshayini S.Appa
Chairperson, Sharnbasveshwar Vidya Vardhak Sangha Member of BOG Sharnbasva University

Poojya Chiranjeevi Doddappa Appa
9th Mahadasoha Peethadipatigalu Sharnbasveshwar Samsthaana Kalaburagi.

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Poojya Matoshree Dr. Dakashayani S. Appa M.A.

Chairman, Sharnbasveshwar Vidya Vardhak Sangha
Member, Board of Governors, Sharnbasva University, Kalaburagi

I am delighted to know that Lingaraj Appa Engineering College Bidar in Association with Sharnbasva University is hosting a National Conference on Recent Trends in Engineering and Management Studies-2022 (RTEMS- 2022) in the college campus on April 12th&13th 2022.

The Conference, which has attracted the presence of several delegates from reputed universities around the country, would go long way in furthering the knowledge of the participating students and helping the academics on the recent advances made in the field of Science and Technology, Engineering, Humanities, Business Studies.

On behalf of the Sharnbasaveshwar Vidya Vardhaka Sangha welcome all the delegates and assure that the delegates would spend their time fruitfully in the conference, I extend my warm appreciation for the efforts to make the conference a success by the organizers.

Poojya Dr. Sharnbaswappa Appaji
8th Mahadasoha Peethadhipathigalu,
Sharnbasveshwar Samsthaana
President,
Sharnbasveshwar Vidya Vardhak Sangha
Chancellor, Sharnbasva University

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Chairperson, Sharnbasveshwar
Vidya Vardhak Sangha
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Poojya Chiranjeevi Doddappa Appa
9th Mahadasoha Peethadipatigalu
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Poojya Doddappa Appa
7th Mahadasoha Peethadigatigalu
Sharnbasveshwar Samsthaana
Founder President
Sharnbasveshwar Vidya Vardhak Sangha

Approved By : All India Council for Technical Education (AICTE), New Delhi

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Our Spiritual Grace & Inspiration

Poojya Chiranjeevi Doddappaji

9th Mahadasoha Peethadhipati
Sharnbasveshwar Samsthana, Kalaburagi

Poojya Dr. Sharnbaswappa Appaji
8th Mahadasoha Peethadhipathigalu, Sharnbasveshwar Samsthaana President, Sharnbasveshwar Vidya Vardhak Sangha Chancellor, Sharnbasva University

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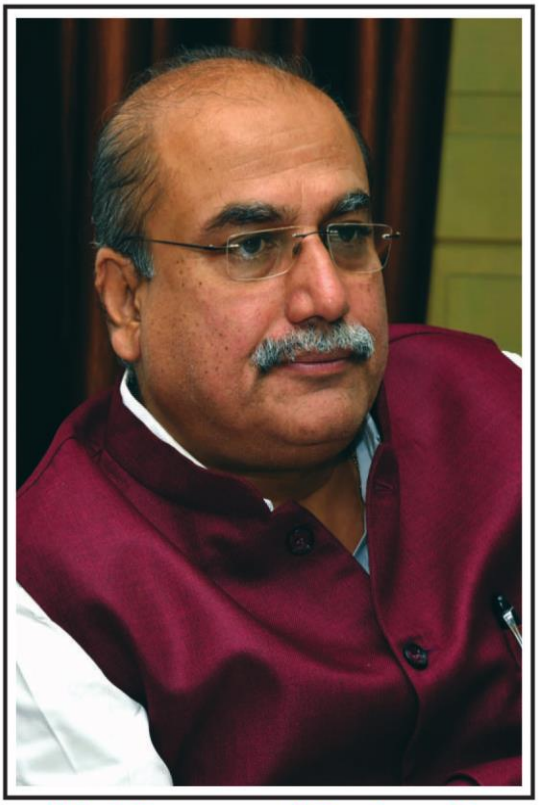

Shri Basavaraj Deshmukh

Secretary,
Sharnabasaveshwar Vidya Vardhak Sangha, Kalaburagi
Member, BOG, Sharnbasva University, Kalaburagi

It gives me immense pleasure to note that under the spiritual guidance of his Holiness Poojya Dr Sharnbaswappa Appaji , the Lingaraj Appa Engineering College Bidar in Association with Sharnbasva University is organizing a National Conference on Recent Trends in Engineering and Management Studies-2022 (RTEMS- 2022) in the college campus on April 12th&13th 2022

The fledgling Lingaraj Appa Engineering College Bidar and Sharnbasva University has already made its mark in the academic circle asone of the fastest emerging centers of excellence in the higher education and this Conference would be another milestone for the Lingaraj Appa Engineering College Bidar and Sharnbasva University.

I take this opportunity to welcome all the delegates from reputed universities from India and earnestly hope that their visit to historic Bidar city would be memorable and wishing all of you a pleasant and purposeful stay in Bidar city.

Poojya Dr. Sharnbaswappa Appaji
8th Mahadasoha Peethadhipathigalu, Sharnbasveshwar Samsthaana President, Sharnbasveshwar Vidya Vardhak Sangha Chancellor, Sharnbasva University

Poojya Matoshri Dr.Dakshayini S.Appa
Chairperson, Sharnbasveshwar Vidya Vardhak Sangha
Member of BOG Sharnbasva University

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Approved By : All India Council for Technical Education (AICTE), New Delhi

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Dr. Niranjan. V.Nisty

Vice-Chancellor
Sharnbasva University, Kalaburagi

It is a matter of pride for everyone in the Lingaraj Appa Engineering College Bidar in Association with Sharnbasva University is organizing a National Conference on Recent Trends in Engineering and Management Studies-2022 (RTEMS- 2022) in the college campus on April 12th&13th 2022, which is not only most relevant subject for academics and student community, but also for the industries and society in general which is in the threshold of marching in the new directions of development.

On behalf of the Sharnbasaveshwar Vidya Vardhaka Sangha I thank the Chancellor Poojya Dr Sharnbaswappa Appaji forgiving his consent for organizing this conference of utmost importance and take this opportunity towelcome all the delegates and guest speakers from different Universities across the Country.

I earnestly hope that the deliberations in the conference would go long way in helping the student community to keep them updated about the recent trends in different spheres of knowledge.

I wish all the delegates and participants in the Conference a pleasant and memorable stay in this history city known as educational hub of the North Karnataka with chain of educational centers and Universities.

Poojya Dr. Sharnbaswappa Appaji
8th Mahadasoha Peethadhipathigalu, Sharnbasveshwar Samsthaana President, Sharnbasveshwar Vidya Vardhak Sangha Chancellor, Sharnbasva University

Poojya Matoshri Dr.Dakshayini S.Appa
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Member of BOG Sharnbasva University

Poojya Chiranjeevi Doddappa Appa
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Approved By : All India Council for Technical Education (AICTE), New Delhi

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Prof. N. S. Devarkal

Pro Vice-Chancellor
Sharnbasva University, Kalaburagi

I am happy to note that the Lingaraj Appa Engineering College Bidar in Association with Sharnbasva University is organizing a National Conference on Recent Trends in Engineering and Management Studies-2022 (RTEMS- 2022) in the college campus on April 12th&13th 2022.

Thanks to the visionary educationist and Chancellor of the University Poojya Dr Sharnbaswappa Appa the Bidar city is emerging as a happening city and major educational hub in the entire Karnataka. The Sharnbasva University is the brain child of Poojya Appaji and it is a multi disciplinary University.

The deliberations in the Conference would go long way in equipping the students with the latest knowledge and make them skillful to take on the challenges in their academic and professional career.

I welcome all the delegates and participants and assure them a pleasant and memorable stay in Bidar.

Poojya Dr. Sharnbaswappa Appaji
8th Mahadasoha Peethadhipathigalu, Sharnbasveshwar Samsthaana President, Sharnbasveshwar Vidya Vardhak Sangha Chancellor, Sharnbasva University

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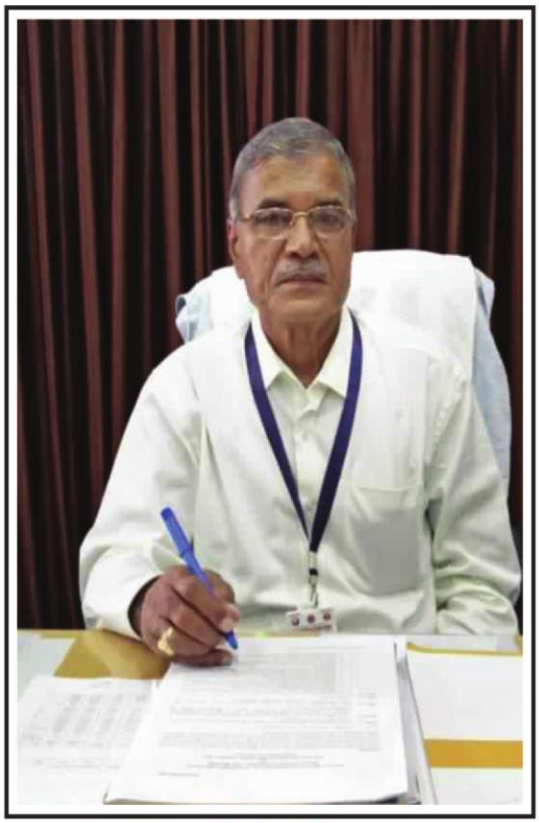

Dr. V. D. Mytri

Pro Vice-Chancellor
Sharnbasva University, Kalaburagi

The Lingaraj Appa Engineering College Bidar in Association with Sharnbasva University is organizing a National Conference on Recent Trends in Engineering and Management Studies-2022 (RTEMS- 2022) in the college campus on April 12th&13th 2022.

The Lingaraj Appa Engineering College Bidar and Sharnbasva University which is emerging as one of the Centres of Excellences by adopting amulti-disciplinary approach, has the rich legacy as an education provider in this Kalyan KarnatakaRegion.

This Conference subject are : Emerging areas in Science, Engineering, Business Studies, Humanities and is most relevant in today's academic environment and to equip the younger generation with the recent advances in the key areas of development including science and technology and engineering fields. This would go long way in improving the skills of the students and making them perfect technocrats to face the challenges in the nation building activities.

Poojya Dr. Sharnbaswappa Appaji
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7th Mahadasoha Peethadipatigalu Sharnbasveshwar Samsthaana Founder President Sharnbasveshwar Vidya Vardhak Sangha

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Dr. Vinita Patil

Principcal
Lingaraj Appa Engineering College, Bidar

It is a matter of great pride that all departments of Lingaraj Appa Engineering college are together organizing Two Days national conference on "Recent Trends in Engineering and Management" in association with Sharnbasva University, Kalaburagi. The conference is in blended mode.

I, Appreciate the great efforts put in by the department, I am certain that the delegates are going to get maximum benefit from the academic feast.

I wish conference to be a grand success.

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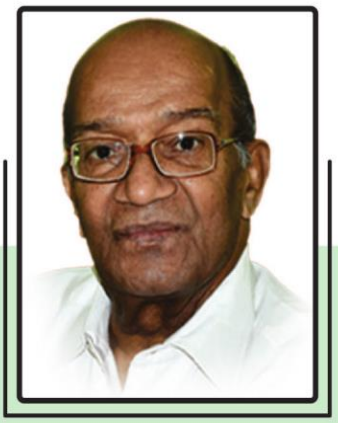

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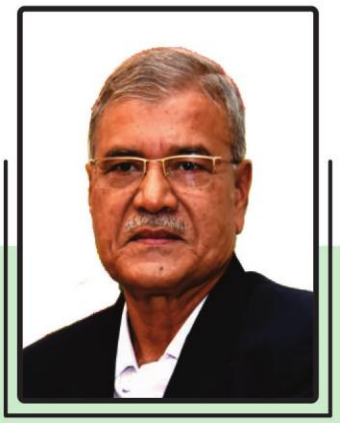

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ECE101: A Review on Gender Identification and IQ From rs-fMRI Of the Brain

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Abstract: Assorted research has been done on predicting biological gender & IQ by using fMRI, rs-fMRI and dynamic functional connectivity and also succeeded in exploring the classification of male and female brain characteristics using various techniques like ICA, GICA, Meta-analysis, DIT, Tensor decomposition etc. The existing studies of the dynamic functional connectivity of rs-fMRI primarily focus on extracting network states that is network connectivity patterns that repeat themselves across time and subjects. Although these methods are useful for summarizing the overall dynamic activity; they do not necessarily repeat the topological organization of the whole brain FCNs. The main objective of this work is to summarize the overall dynamic activity of the brain by using different methods and techniques explained in various research papers for predicting a biological gender as well as classifying male and female characteristics of the brain.

Keywords: (ICA) Independent component analysis, (GICA) Group Independent component analysis, (DTI) Diffusion tensor imaging, (GICA) Group ICA, (TVGL) Time varying graphical LASSO. (PARAFAC) parallel factor decomposition technique.

ECE102: An imperative study of efficient image processing algorithms for lung cancer detection, segmentation and classification: A review

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Abstract: The Lung cancer is one of the leading health issues contributing to the high mortality rate in the universe. The survival rate of lung cancer is very low compared to other cancers. At early stage only 15% of the patients with lung cancers were caught over decades and when it spreads to other organs the survival rate drops to 3.5%. Early detection of the disease is needed to reduce the mortality rate and help to increase the chances of survival rate. Over the last few years, the survival rate has increased from 15% to 49% due to the diagnosis of the disease at an initial stage. A computed Tomography (CT) image is effective to identify the presence of lung cancer. CT images with various image processing algorithms helps in early diagnosis of this disease. A good amount of research work has been carried out towards CAD system for the detection of lung cancer using CT images. It is divided into four stages: pre-processing nodule detection, nodule segmentation and classification. This paper presents in detail the imperative survey on various techniques that have been used in Pre-processing, nodule segmentation, detection and classification.

Keywords: CT images, CAD system, Cancer Detection, Image processing, Feature extraction, etc.

ECE103: A SURVEY ON PAPR REDUCTION TECHNIQUES FOR MULTIPATH FADING CHANNEL

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Abstract: The demand for wireless communication is growing gradually from last few years. The increased popularity and usage of wireless multimedia applications has led to the evolution of cellular systems includes 1G, 2G, 3G, 4G and the next generation 5G till date. We can implement novel modulations for orthogonal multiple access (OMA) or use non orthogonal multiple access (NOMA), in order to support higher throughput, massive and heterogeneous connectivity for 5G networks. Traditional Orthogonal Frequency Division Multiplexing (OFDM) possesses high Peak to Average Power Ratio (PAPR) in 5G which degrades the performance of the system. In most of the prior research work different PAPR reduction techniques have been carried out using AWGN (Additive White Gaussian Noise) channel, here we consider the multipath fading channel.
Keywords: OFDM (Orthogonal Frequency Division Multiplexing), OMA (Orthogonal Multiple Access), NOMA (Non-Orthogonal Multiple Access), Multipath fading channel, PAPR (Peak to Average Power Ratio).

ECE104: A Survey on FPGA based hybrid image fusion model for CT and MRI images

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Abstract: Digital Image Processing is playing vital role in the medical field to diagnose patients' activities related to various diseases. Because of huge advancement in medical diagnostics methods which has greatly improved the performance of assessment and reflection. The two important diagnostic techniques called CT and MRI images are used to perform the fusion process. Multimodal medical image fusion helps to acquire more information about both the functional and structural information's. Fusing these clinical images has raised a new promising research field. The combination of DWT and PCA is combined to form a hybrid algorithm. The MSR is used to identify high frequency component from DWT. DWT method is used for efficient feature transformation of the image using average approximation fusion rule. This hybrid fusion model will focus on enhancement of ranking precision by reducing the redundant characteristics in DWT and inverse and more accuracy is achieved. And also, the image fusion technique is applied for multimodal images for different organs. This

implementation is done on FPGA using Xilinx Vivado environment and Zed board which is optimized for image and video processing IPs.

Keywords: CT (Computed Tomography), MRI (Magnetic Resonance Imaging), DWT (Discrete Wavelet Transform), PCA (Principal Component Analysis), FPGA (Field Programmable Gate Array).

ECE105: Performance Analysis of Multiuser NOMA using Zadoff Chu Spreading Sequence over Fading Channel

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Abstract: The requirements of wireless communication system are progressing steadily in the previous few years. The growing fame and utilization of wireless multimedia approaches have led to the advancement of the wireless system. The fifth generation (5G) wireless communication is developed to serve the users with an enhanced proficiency, low-latency, reliable communication and lesser battery-exhausts. Non-Orthogonal Multiple Access (NOMA) scheme is an efficient multiple access scheme to fulfil the requirement of a 5G mobile system. NOMA permits the allocation of multiple users in similar frequency, time and code domain multiplexing. NOMA enables a remarkable enhancement in the system throughput and ability of connecting devices. This paper presents, Zadoff Chu spreading sequence for the NOMA system. To improve the performance of NOMA system, transmitting symbols are precoded using Zadoff Chu spreading sequence. Simulation results represent the enhancement in the bit error rate performance of the NOMA system over fading channels compare to the traditional NOMA system.

Keywords: Non-Orthogonal Multiple Access (NOMA), Zadoff Chu (ZC) Sequence, Precoding, Fading channel.

ECE106: A Survey on Investigation of Artificial Intelligence Methods in Image Analytics and Computer Vision

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Abstract: Image is the important media which contains more amount of information and acts as a communicator between two points. Image has a greater number of pixels which are extremely correlated to each other. Owing to this correlation, image contain more redundant information and occupy more space and slow transmission capacity. In order to remove those redundant details, compression technique is required to diminish the storage space and increase transmission rate. Image compression is one of the most popular operations in the domain of image processing. The traditional image coding, e.g., JPEG [1] and JPEG 2000 [2], are

generally designed based on the fixed hand-crafted image transformation such as discrete cosine transform (DCT) and wavelet transform. However, they may not be the optimal transformation for feature extraction. Notably, in a low bit-rate compression application, the decompressed image may present visible artifacts such as blurring, ringing and blocking if using the traditional linear transformation for image representations. The color bias problem in the past decade, neural network and deep learning have achieved success in various computer vision tasks due to its advantage of automatic feature extraction and high-level representation. The properties also implicitly show its potential to enhance the performance of image compression. The Neural Network-based auto encoders were first applied to compress images and later became the primary form of learning-based compression models. Recently, many deep learning-based methods have been proposed for image compression. These methods all utilize deep convolution neural networks (CNNs) to construct the encoder and decoder but use different ways to approximate. Thus, this research work is carried out to present new methods using mathematical, statistical or machine learning methods to compress images.

Keywords: CNN (Convolution Neural Network), DCT (Discrete Cosine Transform), Image Compression, ML (Machine Learning).

ECE107: Detection of Plant Leave Disease Using Hybrid Techniques

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Abstract: Plant illnesses are not good for you elements that reduce crop quality and quantity significantly. Biologists or farmers with a lot of experience frequently inspect plants for illness with their naked eyes, however this procedure is typically inaccurate and takes a long time. We apply artificial intelligence and computer vision techniques in this work to create and construct an intelligent classification system for leaf diseases. This study compares the simulation results of two approaches for performance evaluation. In the first section, photos data from Plant Village collection (for apple, maize, Plants for potatoes, tomatoes, and rice) are augmented with data, and deep features are retrieved using a neural network using convolutions (CNN). A Bayesian optimal machine classifier using support vectors is used to classify these characteristics, and the results are measured in terms of precision, sensitivity, f-score, and accuracy. The approaches described above will allow farmers all around the globe to take early action to avoid their crops from becoming irrevocably damaged, so sparing the world and themselves from a possible economic disaster. The second stage of the approach begins with the preparation of data set photos, after which texture and colour characteristics are retrieved using histograms of oriented gradients (HoG), GLCM, and colour moments. In this case, the three categories of features, namely colour, texture, and depth, are merged to generate hybrid features. To get simulation results, binary particle swarm optimization is a technique for reducing the number of particles in a used to pick these hybrid features, followed by classification using a random forest classifier. Binary optimization of particle swarms is a technique for lowering the total number of particles in a technique for lowering the total number of particles in a critical in hybrid feature selection; the reason behind this Algorithm is to provide the best output with the fewest features. The above-mentioned assessment factors are used to conduct a comparative study of both methodologies.

Keywords: Leaves classification, Leaves disease segmentation, Machine learning, Convolution neural networks, Bayesian optical support vector machine classifier, Swarm optimization.

ECE108: Hybrid Techniques for the Segmentation Infection with Covid-19 in the Lungs Using Ct Images

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Abstract: COVID-19 is a deadly disease which causes infection in both animals and human beings. It is a zoonotic disease that scatters worldwide in the beginning of the year 2020. COVID- 19 is termed as Corona Virus Infection in 2019 that makes the whole world to suffer from this existential infection. The Chest x-rays detect lung pollution automatically. Images from computed tomography that aid in the struggle against COVID-19. Several demands are created during the separation of the diseased component from the X-ray slices, including a large difference in disease characteristic and a low intensity difference between infected and normal tissues. The deep model pedagogy makes it hard to gather a large amount of a large amount of data in a short period of time. For Addressing the separation of COVID- 19 related lung disease by using Seg-Net It is proposed that the damaged areas of the chest X-ray be automatically analysed scan, using image process technique to automate the operation to increase the efficiency of the system.
Keywords: Datacentre architecture, datacentre energy efficiency, energy efficient measures, and calculation of datacentre carbon footprint.

ECE109: Face Mask detection using Raspberry Pi

Rashmi Bangar
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Abstract: In an international health crisis, the COVID-19 pandemic reasons a success safety strategy to camouflage public areas around the world (WHO). The COVID-19 pandemic pressured nations around the arena to halt the transmission of viruses. Reviews propose that it extensively lowers the hazard of transmission with the aid of transporting face masks at paintings. Green and in your price range approach to Raspberry PI victimization to construct secure surroundings at some stage in manufacturing operations. Deep and classical gadget getting to know for mask detection is provided for a hybrid model of victimship. There is a mask detection dataset, and while we do not mask pictures, we favour to rectangular degree.
Keywords: Corona virus disease, Face mask detection, Raspberry pi.

ECE 110: MRI Medical Image Denoising & Enhancement using various Filters: A Review

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Abstract: Noise reduction in digital images is the eminent pre-processing scheme in major image processing activities which includes medical image segmentation. A well-designed noise reduction scheme for highly corrupted medical images is needed for medical diagnosing schemes with an immediate attention. To get accurate MRI images for further diagnosis process is difficult as they tend to suffer from various noises, like impulse noise, salt & pepper noise Gaussian noise. To avoid these noises many noise removal filters are used. This study is a review of the current methods used in the process of enhancing the quality of MRI images. The strengths & weaknesses of each method are considered in selecting the best method for handling a variety of different cases. Various filters used here are Median filter (MR), Rank order median filter (ROMF), Wiener filter (WF), Centre-weighted median filter (CWMF), Noise adaptive fuzzy switching median filter (NAFSMF)and Geometric multiscale ridgelet support vector transform filter (GMRSVTF). The summery of each method is presented. The noisy pixels are detected using the occurrence of intensity values 0's & 255's. This study reveals the highest peak signal to noise ratio (PSNR) with noise level of 90% & average image enhancement factor (IEF).
Keywords: MRI, Filters, Enhancement, Noise removal.

ECE111: Multistage spectrum sensing in Cognitive radio network

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Abstract: In cognitive radio networks, the first cognitive task preceding any form of dynamic spectrum management is the spectrum sensing and spectrum hole identification in a wireless environment. In cognitive radio, spectrum sensing is fundamental crucial task. Energy detection method is a basic method, that requires knowledge of noise power, however it suffers from noise uncertainty problem. Covariance based detection exploits space-time signal correlation that does not require the knowledge of noise and signal power. The covariances of signal and noise are generally different which can be used in detection of licensed user. However, there are not many studies that show the feasibility of the detectors and analyze their performance under fading channels. In this project, we analyzed the detector performance exploiting TV White Space under Rayleigh and Rician fading channel by setting probabilities of false alarm and measuring probability of detection. We further analyze the effect of smoothing factor and overall correlation coefficient on the performance of covariance-based detector. Covariance based detector outperformed the energy detector with noise uncertainty even under the time-varying fading channels. Cognitive radio (CR) cycle is spectrum sensing i.e., to detect the spectrum white spaces reliably. Many narrow-band spectrum sensing algorithms have been proposed, including matched filtering, energy detection, and cyclostationary feature detection. Although narrow-band spectrum sensing algorithms have focused on exploiting spectral opportunities over narrow frequency range, CRNs require exploiting spectral opportunities over a wide frequency range from hundreds of MHz to several GHz for achieving higher opportunistic aggregate throughput.
Keywords: Cognitive radio, CMME, energy detection, probability of detection, Two-stage spectrum sensing.

ECE112: Photonic Crystal based Alsant Cavity with Infiltrated Magnetic Fluid for Sensing Magnetic Field

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Abstract: In the paper, a sensor is designed which is based on photonic crystal wherein the magnetic fluid is infiltrated in the aslant cavity which is introduced in the crystal. The proposed structure consists of dielectric rods whose radius is 200nm. Magnetic field sensing can be realized by observing the shift in resonant wavelength. The increase in the infiltrated air holes increases the magnetic field sensitivity. The structure gives a maximum sensitivity of 17.37nm/Oe and a quality factor of 8290. With the help of the PWE method, the photonic bandgap is determined and OptiFDTD is used for the simulation.
Keywords: Magnetic Fluid, Magnetic Field Sensitivity, Photonic Crystal, Q-Factor.

ECE113: A Survey on Visible Light Communication

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Abstract: A revolutionary method to communication is to use visible light technology. The growing demand for wireless communication technologies is driving the development of Visible Light Communication (VLC). It has the ability to enable high-speed data connection while also improving energy efficiency and security. VLCs quick evolution was aided by the LEDs capabilities. Light-Emitting-Diode (LED) luminaires have the ability to rapidly transition between different light intensities. This function can be used to transfer data. The physical layer of VLC links is the subject of this article. It examines the technology, the proposed connection topology, and the advantages of this method. The most important research trends are outlined, with a focus on the state of the art in this field. It depicts the evolution of VLC technology as well as the current state of performance. Different transmitter and receiver structures are researched, as well as different modulation algorithms. Finally, a variety of VLC technology applications are discussed.
Keywords: VLC, OWC, FSO communication, Optical communication equipment, Modulation techniques, M2M communications, LEDs, Lighting, Diode lasers.

ECE114: Application of Machine Learning Techniques in Wireless Network

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Abstract: Optical networks are used to transmit the data in the form of light pulses after converting the electrical signals into light. The optical networks are used in many types of telecommunication networks, namely, Wide area networks (WAN) or Local area networks (LAN). Optical networks are used when the data needed to be transmitted across metropolitan areas or cities or nations. Optical networks play a critical role when the distance of transmission is very large. These networks are also used when the transmission is carried underwater like transoceanic networks. There is a tremendous increase in demand for high band width due to the following reasons:

1. Type of applications used in mobile phones.
2. Number of connections to a web portal or to a network.
3. High growth in internet usage by people.

One of the main solution approaches to address the problem of growing demand for high bandwidth is usage of optical fibers to transmit the data in the form of light pulses. The advantage of using optical fibers is it can handle bandwidth of 50 THz. Also, the bit error rate of optical fibers is 10 - 12. One of the main drawbacks of optical fibers is, though the bandwidths that the optical fiber can support is in the order of Tera bytes, it cannot be utilized to its full capacity. This is due to the reason that, the light pulses need to be ultimately converted into the electrical signals at the receiver end and hence there is limitation for the speeds. Therefore, the capacity of optical fibers is tuned only to a few Giga bytes instead of Tera bytes. This problem of mismatch between the speed transmission of light pulse in the optical fiber and the speed of conversion into electrical signals at the receiver end can be eliminated by using the Wavelength Division Multiplexing (WDM) technology. The mismatch is termed as the electronic bottleneck. The large band width is split into smaller chunks of bandwidths. Disjoint smaller chunks are created to avoid overlap of the bandwidths. Each chunk is assigned an average wavelength and is termed as a channel. When a user connects to the network, he/she is assigned a channel to meet data transfers at peak electronic speed. When a call or data is transmitted through a channel, the data is converted into a light pulse of unique wavelength. Since each light pulse is of distinct wavelength, many light pulses of distinct wavelengths can be combined together and transmitted in the optical fiber simultaneously without actually overlapping with each other. This process of combining and transmitting many light pulse signals is known as multiplexing. At the receiving end De-multiplexing is carried out where the light pulses of distinct wavelengths are converted into corresponding electronic signals.

ECE115: VIRTUAL PERSONAL ASSISTANT

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Abstract: Artificial Intelligence (AI) technologies are one of the new technologies with new complicated features, that are emerging in a fast pace. Although these technologies seem to be extensively adopted, people do not intend to use them in some cases. Technology adoption has been studied for many years, and there are many general models in the literature describing it. However, having more customized models for emerging technologies upon their features seems necessary. In this paper, we developed a conceptual model involving a new system quality construct, i.e., interaction quality, which we believe can better describe adoption of AI-based technologies. In order to check our model, we used a voice assistant system (VAS) technology as an example of this technology, and tested a theory-based model using a data set achieved from a field survey. Our results confirm that interaction quality significantly affects individual's trust and leads to adoption of this technology.
Keywords: Artificial Intelligence, Voice Assistant System, Speech Recognition Model, API, Interaction Quality, Trust, Technology Adoption.

ECE116: Compact Split Ring Slotted Pentaband Rectangular Microstrip Patch Antenna

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Abstract: In this paper a Compact Split Ring Slotted Rectangular Microstrip Antenna (CSR-SRMA) fed by a 50 Ω microstrip line. A split C shaped slot has been introduced on the split ring rectangular microstrip antenna. The slot increases the length of the surface current for the dominant mode leading to the decrease in resonance frequency. The size reduction along with Pentaband is obtained with the antenna and it is suitable for wireless communication. The proposed work is simulated using 3DEM of Mentor-graphics. The simulation shows that Pentaband with compactness is achieved.

Keywords: Compact, Microstrip, multiresonant, Pentaband, Slot, Split Ring.

ECE117: A Literature Survey on Multistage Spectrum Sensing Technique for Cooperative Communication

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Abstract: Cognitive radio spectrum Sensing is a promising technology to meet the efficient usage of available frequency spectrum for future technology and demand for high data transmission. Cognitive radio Spectrum Sensing requires detection of licensed user signals for dynamic allocation of unused spectrum to unlicensed users. In this paper, a literature review of spectrum sensing is discussed, presenting different research domains of spectrum sensing for cognitive radio networks.

Keywords: Cognitive Radio, Dynamic allocation, Licensed user, Spectrum Sensing.

ECE118: Social Distancing and Face Mask Detection using Deep Learning

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Abstract: A novel virus has caused a world pandemic and huge life losses. Declared by the World Health Organization (WHO), this coronavirus originated from Wuhan, China in late December 2019. Upon thorough research, the virus has been observed as pathogenic and transmissible by air or by coming in close contact with an infected person. To avoid the spread of this virus, many measures have been suggested, such as maintaining a social distance, that is, maintaining a proper physical distance between people and lessening close contact with each other, and wearing a face mask to avoid the droplets from transmitting through the air. Therefore, this research paper focuses and aims its study towards implementing a Social Distancing and Face Mask Detection System. This system will implement object detection and facial recognition in the video footages of pedestrians. Pre-trained models such as the YOLOv3, ResNet Classifier and DSFD are used. People violating the minimum distance were detected as well as faces without face-masks were detected. An overall results board is displayed in the output containing the number of people violating or non-violating the respective measures. After implementing and deploying the models, this research project achieved a confidence score of 100%. Therefore, this research project concludes with proven facts that social distancing and wearing face masks helps reduce the spread of the virus and thus builds a model to help detect these measures.

ECE119: A SMART PATIENT HEALTH MONITORING SYSTEM USING IOT

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Abstract: The healthcare monitoring systems has emerged as one of the most vital system and became technology oriented from the past decade. Humans are facing a problem of unexpected death due to various illness which is because of lack of medical care to the patients at right time. The primary goal was to develop a reliable patient monitoring system using IoT so that the healthcare professionals can monitor their patients, who are either hospitalized or at home using an IoT based integrated healthcare system with the view of ensuring patients are cared for better. A mobile device based wireless healthcare monitoring system was developed which can provide real time online information about physiological conditions of a patient mainly consists of sensors, the data acquisition unit, microcontroller (i.e., Arduino), and programmed with a software (i.e., JAVA). The patient's temperature, heart beat rate, EEG data are monitored, displayed and stored by the system and sent to the doctor's mobile containing the application. Thus, IoT based patient monitoring system effectively monitor patient's health status and save life on time.
Keywords: Arduino, JAVA, IoT, data acquisition unit, mobile application etc.

ECE120: SMART CARRIER IN SHOPPING MALLSUSING RIFID AND ZIGBEE

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Abstract: A supermarket or a hypermarket is a form where wide variety of product items is available. These product items can be food, beverages or any household product. Automation

is the most frequently spelled term in the field of electronics. The hunger for automation brought many revolutions in the existing technologies. Nowadays, buying and searching at huge malls is turning into a daily activity in subway cities. We can see large rush at malls on holidays and weekends. The rush is even a lot of once there are special offers and discounts. People purchase totally different things and place them in trolley. After total purchase one needs to go to cashier for payments. The cashier prepares bill victimization bar code reader that could be a time overwhelming method and leads to long queues at charge counters. This study targeted to minimize the Queue at a billing counter in a shopping complex. Smart Trolley does the same by displaying the total price of the product kept inside the cart. In this way the customer can directly pay the amount at the billing counter and leave with the commodities he/she has bought. It eliminates the traditional scanning of products at the counter and in turn speeds up the entire process of shopping, also with this system the customer shall know the total amount to be paid and hence can accordingly plan his shopping only buying essential commodities resulting in enhanced savings. Since the entire process of billing is automated it reduces the possibility of human error substantially.

ECE121: Emotion Based Music Player

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Abstract: Listening to music affects the human brain activities. Emotion based music player with automated playlist can help users to maintain a particular emotional state. This research proposes an emotion-based music player that creates a playlist based on captured photos of the user. Manual sorting of a playlist and annotation of songs, in accordance with the current emotion, is more time consuming and quite tedious. Numerous algorithms have been implemented to automate this process. However, existing algorithms are slow, increase cost of the system by using additional hardware and have quite very less accuracy. This paper presents an algorithm that not only automates the process of generating an audio playlist, but also to classify those songs which are newly added and the main task is to capture current mood of person and to play song accordingly. This enhances the system's efficiency, faster and automatic. The main goal is to reduce the overall computational time and the cost of the designed system. It also aims at increasing the accuracy of the system. The most important goal is to make change the mood of person if it is a negative one such as sad, depressed. This model is validated by testing the system against user dependent and user independent dataset.

Keywords: Convolution neural network, Long Short-term memory, Emotion detection, audio classification, hidden layers, Max-pooling.

ECE122: A Study of Multiband Monopole Antenna Design for Wireless Communication Applications

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Abstract: Antennas are particularly important communication devices since they are utilized as both a transmitter and a receiver. Microstrip antennas are a better alternative than traditional antennas in today communication devices, which are becoming thinner and smarter, supporting multiple applications and requiring larger bandwidth. Microstrip antennas should be able to give a wide bandwidth while being small enough to conduct this task. The surveys' goal is to use a 3D electromagnetic field simulator called HFSS to develop and simulate rectangular and circular Microstrip Patch Antennas for various feeding approaches, as well as to measure antenna metrics like VSWR, radiation pattern, and return loss.
Index Terms: Multiband antenna, wideband antenna, monopole antenna, micro strip.

ECE123: Data hiding in IPCM blocks using Advanced video coding

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Abstract: A reversible data hiding method using Advanced Video Coding (AVC) is implemented in this work, which compresses the size of multimedia content. Due to widespread use of multimedia content over internet, privacy and security are major concern. Hence it is necessary to perform data hiding in the encrypted domain. This paper proposes an effective scheme for reversible data hiding in encrypted AVC video bit streams. To protect the confidentiality and privacy of video content, motion vector differences, code words of intra prediction modes and partial residual coefficients are encrypted without altering video bit rate increment. Embedding of secret data is carried out by histogram shifting method. In data hiding phase, analysis of the picture distortion caused by embedding data and inter-frame distortion drift is determined. According to appropriate analysis, embedding distortions caused by modifying different residual coefficients and embedding secret data into residual coefficients with distinct priorities for reducing the inter-frame distortion drift are estimated. In decoding phase, the receiver decrypts the encrypted video bit stream and extracts the embedded secret data, hence the original video bit stream can be perfectly recovered without loss of information. Obtained results show that it is possible to retrieve all the information while maintaining the quality of the video using AVC standard.

ECE124: Diabetes management using IOT and blockchain technology

Poonam Jundale

Abstract: Diabetes is a widely prevalent medical condition affecting patients across geographies, ethnicities and age groups. Though a lot of medication procedures have been in practice and have been proposed in the literature till now, each patient requires an optimized treatment of diabetic conditions based upon his/her physical features and body chemistry. In order to achieve this, it is imperative to gather data on thousands of patients about their physical conditions and their body-chemistry. This is now possible to be obtained due to advances in Internet of Things that enable detection of multiple heath parameters (e.g., heart beat-rate, body temperature, pulse rate etc) using technologies relying on Internet of Things which allow gathering of information remotely and storing them in the cloud. However, the most important

inhibiting cause that prevents this gathering of data is distrust of the patients that their vital physical information falling in the hands of inimical elements with mal intensions. In this regard blockchain technology might be utilize to increase the privacy of the information that has been shared by the patients for getting into the hands of nefarious actors. Hence our aim is investigating currently proposed fog-computing network architectures that enable blockchain based information sharing in healthcare organizations.

ECE125: Comparative Analysis of Energy Efficient Dynamic Multicluster Routing Algorithm with LEACH Protocol for Wireless Sensor Network

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Abstract: Prolonged lifetime is the one of the important requirements in Wireless Sensor Network (WSN). As communication is the major cause of energy depletion in the network so designing of energy efficient routing algorithm is one of the key challenges that need to be address for extending life time of network. In this paper we have taken the deployed redundant nodes in to account which cover major fraction of energy depletion in the network. We present energy efficient routing algorithm, Dynamic Multi-cluster based upon the frame work of LEACH. In LEACH there are several nodes they monitor the same event thus provide the redundant information which is discarded by the cluster head before transmit it base station. This will cause major fraction of energy depletion in WSN. This redundancy of deployed nodes can be used as an advantage for increasing network life time. To our presented scheme we simulate it using MATLAB. Simulation results show that Dynamic Multicluster had outperformed LEACH on the basis of Network life time.

Keywords: (WSN) Wireless Sensor Network, Limited Energy Design Challenges, Routing algorithm, Redundant data, Network life time

ECE126: An Efficient Design and optimization of Fixed-Point Binary Antilogarithmic Computation

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Abstract: Embedded system applications require low power, fast and area-efficient implementation of complex arithmetic operations. Modern field-programmable gate array (FPGA) is a suitable candidate for implementing any reasonably complex architecture within minimal design time. By using a fixed-point data path, the available FPGA macro elements can be used to design an architecture that is much more complex. The realization of the complex arithmetic elements can be simpler by using a logarithmic number system. In this paper, a novel architecture and the FPGA realization of an antilogarithmic computing circuit is proposed. The proposed antilogarithmic circuit uses piecewise linear approximation method. The same architecture works for both the positive and negative binary numbers. The device utilization shows that the architecture utilizes a minimal FPGA resource. We have also performed error analysis of the approximation result. The error analysis shows that error associated with the positive numbers is 0.16 % while that for the negative numbers is 0.8 %.

Keywords: antilogarithm; fixed-point architecture; FPGAs; embedded system; VLSI.

CSE101: Real time implementation of AI based face mask detection System

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ABSTRACT: COVID-19 caused due to corona virus; this virus was first discovered in Wuhan on Dec -2019 now it is a pandemic effecting almost every country in the world. This virus transmitting from one person to another person through droplets spawned when a covid patient sneezes, coughs or exhales. Even these droplets reach ground soon because they are heavy and unable to hang in the air. One of the solutions to prevent covid-19 is wearing the face masks, many governments trying their best to educate citizens to wear masks in public places even they made it mandatory, but majority people are violating this rule. In current scenario police frequently check for face mask in public places and imposing fine on the people who are not wearing face mask. On other hand some governments introduced technology to detect people without face mask and send their details to petrol team then they will catch them. In this paper we are proposing a model which detects public without facemask and that data can be used to identify the person who is not wearing the mask using facial detection system then that data is integrated with public identification data base to collect details of that person and fine amount will send to his mobile number and address. using CNN model, we have detected persons with mask and without mask. CNN can able to identify pixel level data when compared to many algorithms available, CNN works more accurately. We implemented a model with two convolution layers with 100 filters in each and applied drop out 0.5% and used Relu, soft max as activation functions at hidden and fully connected layers respectively, Cross entropy used as loss function adam is optimizer and model trained over 1500 images consists of both classes with mask and without mask and cascade classifier is used to classify faces and it is working with 91.21 accuracy. This AI based mask detection system definitely creates fear in the minds of public and they will start wearing mask in public places so that the spreading of the disease can be controlled that intern useful for wellbeing of the society.

CSE102: TECHNIQUES OF E-LEARNING USING BEST E-LEARNING TOOLS FOR 2022

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Abstract: E-Learning is getting the sling of using electronic advances to get to instructive educational program outside of a traditional study hall. Much of the time, it alludes to a course, program or degree conveyed totally on the web or online. Techniques of E-Learning are used to implement the effective online learning. In this paper we discuss what the E-Learning techniques present are and how they are useful to present E-Learning Tools. An E-Learning proficient is just on a par with their best instruments. Just as learning the board frameworks, there are currently a wide range of clever online applications that can assist you with organizing your work, look into patterns, make course content, connect with peers, and speak with

students.

Keywords: E-Learning, Techniques of E-Learning, E-Learning Tools.

CSE103: Smart home for physically challenged and aged people using Cloud and IOT

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Abstract: Automation of device has a wide scope for this generation as well as in forthcoming generation. As technology is advancing so houses are also getting smarter. Modern houses are gradually shifting from conventional switches to centralized control system, involving wireless controlled switches. It provides open source to user to design automation in less price. Internet based house automation system is designed to assist people with physical disabilities, physically challenged people, old aged people to control the devices using smart phones. with the availability of Wi-Fi, microcontroller we can control all the appliances of the home and office. Our system uses low cost and provides reliable home control monitoring system for accessing and controlling devices and appliances remotely using Android based smart phone application. While using this technology the system improves the living standard at home, reduce human effort, energy efficient and time saving and thus make a smart home. And also, it is very helpful for providing support to disable people and aged people and fulfil their needs in home and thus they lead a normal life. The main objective of this project is to develop smart home application for physically challenged and aged people using IoT and Cloud.

CSE104: Sooty Tern Optimization Algorithm inspired Clustering based Routing Protocol for improving the throughput and network lifetime in Fanet's.

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Abstract: Flying ad hoc Networks nodes possess characteristic of extreme mobility, routing in FANET is volatile due to its battery energy restrictions. To address this issue, in this article, we present energy-efficient routing paradigm for resource-constrained named sooty tern optimization algorithm based proficient routing protocol, due to its faster convergence and high exploration and exploitation capabilities to perform energy efficient cluster-based routing for maximizing throughput and network life maximization in the fanet. Our focus is on providing the improved solution to the cluster head selection problem through Sooty Tern optimization algorithm. The experimental results show that STOA can largely improve the throughput, reduce the delay, and improve the stability of the network, which is more suitable for FANETs.
Keywords: Sooty Tern, Fanet, cluster-head, throughput, network life.

CSE105: COVID-19 SPREADERS IDENTIFICATION WITH A MULTIPLEX NETWORK APPROACH

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Abstract: In this paper, we present a methodology to identify COVID-19 spreaders using the analysis of the relationship between socio-cultural and economic characteristics with the

number of infections and deaths caused by the COVID-19 virus in different countries. For this, we analyse the information of each country using the complex networks approach, specifically by analysing the spreaders countries based on the separator set in 5-layer multiplex networks. The results show that, we obtain a classification of the countries based on their numerical values in socioeconomics, population, Gross Domestic Product (GDP), health and air connections; where, in the spreader set there are those countries that have high, medium or low values in the different characteristics; however, the aspect that all the countries belonging to the separator set share is a high value in air connections.

Keywords: Complex networks, complex systems, COVID-19, multiplex networks, optimization, social networks.

CSE106: AI AND CLOUD BASED COLLABORATE PLATFORM FOR PLANT DISEASE IDENTIFICATION

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Abstract: In this paper, we present an agricultural productivity is that thing on which Indian Economy highly depends. This is the one of the reasons that disease detection in leaves plays an important role in agriculture field, as having disease in leaves are quite natural. If proper care is not taken in this area, then it causes serious effects on leaves a due to which respective product quality, quantity or productivity is affected. Detection of leaf disease through some automatic technique is beneficial as it reduces a large work of monitoring in big farms of crops, an at very early stage itself it detects the symptoms of diseases means when they appear on leaf leaves. So, in this propose design presents an algorithm for image segmentation technique use for automatic detection as well as classification of leaf diseases a survey on different diseases classification techniques that can be used for leaf disease detection. Image segmentation, which is an important aspect for disease detection in leaf disease, is done by using genetic algorithm.

Keywords: Diseased and Healthy leaf, Random Forest, Feature extraction, Training, Classification

CSE107: CONTEXT DEEP NEURAL NETWORKS MODEL FOR PREDICTING DEPRESSION RISK USING MULTIPLE REGRESSION

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Abstract: Depression strikes different people regardless of their social status, education level, or gender. For this reason, it is important to detect this disease as soon as possible to avoid negative consequences in people who suffer from it. This study is a review of scientific literature, where 200 articles have been collected from the following databases: Ebsco Host, IEEE Xplore, Science Direct and Scopus. Based on our inclusion and exclusion criteria, 40 articles were systematized. Having good results on the topic of the most common intelligent systems and the approach that is recommended when developing an intelligent system.

Keywords: Artificial intelligence, prevention of depression, systematic review.

CSE108: Overflow: Multi-Site Aware Big Data Management for Scientific Workflows on Clouds

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Abstract: The worldwide sending of cloud datacentres is empowering substantial scale logical work processes to enhance execution and convey quick reactions. This remarkable geological conveyance of the calculation is multiplied by an expansion in the size of the information dealt with by such applications, conveying new difficulties identified with the proficient information administration crosswise over locales. High throughput, low latencies or cost-related exchange offs are only a couple worries for both cloud suppliers and clients with regards to taking care of information crosswise over datacentres. Existing arrangements are restricted to cloud-gave capacity, which offers low execution in view of inflexible cost plans. Thus, work process motors need to ad lib substitutes, accomplishing execution at the cost of complex framework designs, upkeep overheads, lessened unwavering quality and reusability. In this paper, present Overflow, a uniform information administration framework for logical work processes running crosswise over geologically appropriated locales, planning to receive monetary rewards from these geo-differing qualities. Our answer is condition mindful, as it screens and models the worldwide cloud framework, offering high and unsurprising information taking care of execution for exchange cost and time, inside and crosswise over locales. Flood proposes an arrangement of pluggable administrations, assembled in an information researcher cloud unit. They furnish the applications with the likelihood to screen the hidden foundation, to adventure savvy information pressure, DE duplication and geo-replication, to assess information administration expenses, to set a trade-off amongst cash and time, and upgrade the exchange technique in like manner. The framework was approved on the Microsoft Azure cloud over its 6 EU and US datacentres. The tests were led on several hubs utilizing engineered benchmarks and genuine bio-informatics applications (A-Brain, BLAST). The outcomes demonstrate that our framework can display precisely the cloud execution and to use this for proficient information scattering, having the capacity to diminish the money related expenses and exchange time by up to three times.

Keywords: Cloud Computing, Scientific Workflow, Geographically Distributed, Data Management.

CSE109: ANALYSIS OF WOMEN SAFETY IN INDIAN CITIES USING ML ON TWITES

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Abstract: Nowadays women are experiencing heaps of violence like incitement in places in a couple of metropolitan regions. This beginnings from following which then prompts harsh harassing or similarly called abuse assault. In this paper we essentially revolve around the gig of online media which can be used to propel the prosperity of women in India, given the exceptional reference to the interest of various electronic media locales or applications, for instance, Twitter, Facebook and Instagram stages. This exploration paper fundamentally centres around the job of virtual entertainment in advancing the security of ladies in Indian urban communities with unique reference to the job of web-based entertainment sites and applications remembering Twitter stage Facebook and Instagram Tweet for the Twitter application contains the texts, sound data, video data, pictures, smiley explanations and hash-

marks. This tweet content can be used to examine among people and appropriately can help them to take demanding actions assuming tweets are harsh to women and accordingly can rebuke such people on the off chance that the incitement is made. Applications which consolidate hash-names, similar to Twitter and Instagram, can be used to spread the messages across the entire globe and prompt the women to feel permitted to convey their viewpoints and opinions. By this we can know the state of their mind when they go out for work or travel in a public transportation or incorporated by puzzling men and on the off chance that it feels they are secure.

Keywords: Women, Safety, Sexual Harassment, Hash tag, Sentimental Analysis.

CSE110: BIT-TORRENT AS A MULTI AGENT MODEL

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Abstract: In today's computing world when peer to peer content distribution is at an all-time high, the significant role played by Bit torrent protocol can't be overlooked. The introduction of this protocol revolutionized the way people downloaded different types of content and the speed at which they downloaded it. In this paper we have explained algorithms or strategies used by bit torrent protocol to achieve efficiency and fairness. We have listed the step-by-step execution of the algorithms with tabular example for better analysis. We have also prepared pseudo code for implementing these algorithms. Bit Torrent network act as a multi-agent system. In it, each Bit Torrent client is an agent that interacts with other agents and reacts autonomously, following same decision algorithms as a real client. Their goals are downloading contents in the shortest time possible and sharing them with other agents. The model is programmed in JADE, a software framework in Java language for agent development. The model has been validated by initial tests, and it will be used to study the behavior of Bit Torrent networks in diverse situations that are hard to emulate in a real network or with other models, like modifications of the protocol or behaviors of the users.

Keywords: P2P, MULTI AGENT, SEEDER, LEECHER, TRACKER, CHOKING

CSE111: Object Level Orientation During Backup using Data Pump

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Abstract: Oracle Data Pump facilitates high-speed transfer of data and metadata from one database to another. This is the basis for the many Oracle Database data movement utilities. Data Pump Export (Export) is a utility for unloading data and metadata into a set of operating

system files called dump file set. These files are made up of one or more binary files that contain original data, database object metadata, and control information. Data Pump Import (Import) is a utility for loading an exported set of dump files into a database. Import can also be used to load a destination database directly from a source database with no intermediate files, which allows export and import operations to run concurrently, minimizing total elapsed time. This paper discusses about architecture of data pump, limitation of export utility in case of single table restores using full backup and how table level orientation in dump files will help.

Keywords: Backup, DB, EXPDP, IMPDP, Object, Parallelism

CSE112: Parametric analysis for the food quality using Artificial Intelligence

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Abstract: Food quality and safety is a major concern for the whole community since it is the base for human health, social progress, and social stability. It is a complicated procedure to ensure food quality and safety, and all phases of food processing must be examined, from harvesting and storage through preparation and consumption. However, these procedures might be time-consuming. Machine vision can substantially aid researchers and enterprises in boosting food processing efficiency in today's technologically advanced world. When it comes to food processing, machine vision has been extensively used. Image processing is a key part of machine vision at the same time. There are several ways in which image processing might benefit from machine learning and deep learning models. Machine vision systems may be used for activities such as food grading, locating faulty areas or foreign items, and eliminating contaminants after the initial design has been completed. The machine learning and deep learning model are employed to identify the laying object (dry oily objects) using the scripting language python.

CSE113: Heart Disease Prediction using KNN and Hyper Parameter tuning Techniques

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Abstract: The healthcare sector gathers massive volumes of healthcare data, which can be turned into valuable information by using different machine learning techniques. Early diagnosis and analysis of heart disease is required to reduce the number of deaths occurring due to it. Now a day’s heart diseases are increasing day by day because of the present life style, genetic problem, Blood Pressure, level of cholesterol and pulse rate etc. Therefore, early

diagnosis of disease plays a major role in preventing the heart related problems. The objective of the paper is to diagnose and predict Heart Diseases by developing ML based model with the UCI repository Cleveland heart datasets, Univariate analysis of the data is done to check for the imbalanced or balanced, skewness/kurtosis, and correlation among the features. Random forest Classifier is used in feature engineering. Grid Search and Random Search methods are used for tuning of hyper parameter. The performance of the model is evaluated using various metrics such as confusion matrix, Accuracy score, Precision-recall curve and Receiver operating curve. Basic KNN without Transformation Outlier Removal and KNN with Outlier Removal ML models are proposed and among them, former method results into Testing Accuracy of 68.85% with (PRS) 73% and AUC-ROC as 74% whereas the later offers with (PRS) 74% and AUC-ROC of 83% with 77.01% of Testing accuracy.
Keywords: Classifier, Machine Learning, Heart disease prediction, Grid search, K-Nearest Neighbor

CSE114: FACE MASK DETECTION USING IMAGE PROCESSING WITH DEEP LEARNING

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Abstract: Changes in the lifestyle of everyone around the world. In those changes wearing a mask has been very vital to every individual. Detection of people who are not wearing masks is a challenge due to Outbreak of the Coronavirus pandemic has created various the large number of populations. The corona virus COVID-19 pandemic is causing a global health crisis so the effective protection methods is wearing a face mask in public areas according to the World Health Organization (WHO). The COVID-19 pandemic forced governments across the world to impose lockdowns to prevent virus transmissions. Reports indicate that wearing facemasks while at work clearly reduces the risk of transmission. This idea can be used in schools, hospitals, banks, airports, and etc. as a digitalized scanning tool. The technique of detecting people's faces and segregating them into two classes namely the people with masks and people without masks is done with the help of image processing and deep learning. With the help of this project, a person who is intended to monitor the people can be seated in a remote area and still can monitor efficiently and give instructions accordingly.

CSE115: AUTOMATIC LOGO RECOGNITION FROM A COMPLEX DOCUMENT

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Abstract: Automatic logo detection and recognition continues to be of great interest to the document retrieval community as it enables effective identification of the source of a document. In this paper, we propose a new approach to logo detection and extraction in document images that robustly classifies and precisely localizes logos using a boosting strategy across multiple image scales. In this paper we propose a method for logo recognition based on Convolutional Neural Networks, instead of the commonly used key point-based approaches.

The method involves the selection of candidate sub windows using an unsupervised segmentation algorithm, and the SVM-based classification of such candidate regions using features computed by a CNN. For training the neural network we augment the training set with artificial transformations, while for classification we exploit a query expansion strategy to increase the recall rate. Experiments were performed on a publicly-available dataset that was also corrupted in order to investigate the robustness of the proposed method with respect to blur, noise and lossy compression. We demonstrate the effectiveness of our approach using a large collection of real-world documents.

CSE116: PARAMETRIC ANAYLSIS FOR FOOD QUALITY EVALUATION USING ARTIFICIAL INTELLIGENCE

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Abstract: Food quality and safety is a major concern for the whole community since it is the base for human health, social progress, and social stability. It is a complicated procedure to ensure food quality and safety, and all phases of food processing must be examined, from harvesting and storage through preparation and consumption. However, these procedures might be time-consuming. Machine vision can substantially aid researchers and enterprises in boosting food processing efficiency in today's technologically advanced world. When it comes to food processing, machine vision has been extensively used. Image processing is a key part of machine vision at the same time. There are several ways in which image processing might benefit from machine learning and deep learning models. Machine vision systems may be used for activities such as food grading, locating faulty areas or foreign items, and eliminating contaminants after the initial design has been completed. The machine learning and deep learning model are employed to identify the laying object (dry oily objects) using the scripting language python.

MBA101: CHALLENGES AND PRESUMPTIVE OF WOMEN NTREPRENEURSHIP IN INDIA

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Abstract: The role of women at the work place has undergone a dramatic change in the last 50 years, just as the view of entrepreneurships over the centuries. Just five decades ago, there were only a few women who owned and operated their own businesses. The Second World War brought many more women into the workforce, but such accepted social values as the male being the head of the house and women being dependent and staying indoors did not create an

environment conducive for women to work unless there was a necessity. Of late, women have tried to shed this traditional mould. Also, there have been significant social, political, and economic changes that have created opportunities for women as well as given them greater acceptance and recognition in the corporate world. A woman entrepreneur includes a woman or a group of women who initiate, organize, and operate a business enterprise.

Slowly they are making their mark as business women and giving their male counterparts a run for their money. Women entrepreneurs have been on the Indian business scene for quite some time now and have achieved remarkable success. However, their number in relation to the overall number of small-scale enterprises is still very small. Worldwide too, the trend is not very much different.

Entrepreneurship plays an important role in developing society of a fast-developing country like India. Nowadays it has been realized that enterprising women have cast entrepreneurial talents which could be harnessed so as to convert them from the position of Jobseekers to Job givers. The government has realized the importance of women entrepreneurship. As a result, it offers a variety of programmes for women entrepreneurs. Even though the government organizes women by various associations, they are not ready to undertake the business. As compared to men, women are less motivated to start business units due to some unwanted fear, lack of motivation and kind of activities. The present paper is tries to know the challenges of women entrepreneurship and prospective of women entrepreneurship in India

Keywords: Women Entrepreneurship, Social values, Business Enterprise.

MBA102: A STUDY ON THE IMPACT OF PERFORMANCE MANAGEMENT SYSTEMS ON EMPLOYEE'S PERFORMANCE IN DEGREE INSTITUTIONS IN KALABURAGI

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Abstract: The reason for this investigation is planned for surveying the effect of execution the executive's frameworks on representative execution. The particular targets were to realize how self-awareness impact worker execution, to discover how pay impacts representative execution, to distinguish how assessment of worker exhibitions impact foundation execution and to know the presentation the executive's framework and how it helps in institutional turn of events. The investigation achieved high reaction which helped the discoveries to be intensive. It came out unmistakably that PMS affects representative execution. It was uncovered that PMS has changed the manner in which representatives' works as far as granting information and aptitudes through preparing and tutoring. It has helped them feel enabled as far as compensating them for the great work done. PMS has assisted with separating accomplishment among representatives at all levels, in this way driving optional exertion. Nonetheless, the foundation must view PMS as comprehensively, enveloping all the components, for example, establishment culture. Without this capacity or want the PMS is probably going to turn into a consistence action instead of increasing the value of the organization and representatives. There should be sensible remuneration for better workers.

Keywords: Performance Management, PMS, employee performance, personal development, institutional development.

MBA103: CROWDSOURCING: A BUSINESS FRAMEWORK

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Abstract: Crowdsourcing is one of the ancient practices which are adopted in varied ways. The primary advantage of it seems to relatively low cost and ability to scale. Considering this competitive advantage that it is enabled in the domain specific by the alteration of methodology as largely proposed by scholars. The generalized business perspective framework is not widely defined. This paper attempts in a wider perspective to bring out a generalized business framework for the crowdsourcing platform.

MBA104: Title of Topic: Antecedents of Consumer Buying Behavior in E-Commerce Business in Covid-19: Generation Y

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Abstract: The reality of this new pandemic took the world by surprise. People worldwide are still trying to adapt to the idea of prolonged indoor stays. Pandemics like COVID-19 result in a disruption in the lifestyle and buying behaviors pattern of a consumer and adversely impact the global economy. “The aim of study was to investigate the factors that have affected the consumer buying behavior in e-commerce business, especially during covid-19”. This research was conducted via qualitative analysis on top e-commerce websites. Hypothesis tests were conducted in this research via personal interview and on secondary data. The finding of study impact of consumer buying behavior on the independent variables of social media campaigns e-paper advertisements, and television commercials. It is found that social media campaigns and television commercials are having significant impact on the buying behavior of consumers during covid-19. Based on finding recommendation and suggestion is in enclosed.

MBA105: REVIEW ON MUTUAL FUNDS IN FINANCIAL SERVICES

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Abstract: The Mutual Fund is that puts the particular surplus funds of several speculators who share regular financial monetary objectives. The money will be collected is raised from the store chief in several securities in counting after the motivation right behind the plan. This could be from stocks to be able to debentures to currency show off instruments. Speculation and money gratefulness as handled by simply this arrangement are accomplished by unit holders comparatively to the quantity regarding units devoured (ace rata) by profit earned. Along these lines typically the Mutual Fund is typically the most proper venture regarding the overall population as it offers the degrees of possibility to set resources into portfolios, together with generally minimal effort over experts. Any individual who else has an abundance can be had as meagre as a maximum number of rupees could put resources into Common Funds. Each Mutual Fund plan has a characterized speculation goal and treatment.
Keywords: Mutual Fund, Financial Services, Performance Evaluation, Market Trend, Future Scenario.

MBA106: THE EFFECT OF GREEN PRODUCTS PURCHASE DECISION DURING COVID-19 PANDEMIC IN INDIA

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Abstract: Preference of influence of green purchase decision during COVID-19 to environmentally friendly product. Awareness of the current world community of the importance of environmental sustainability is increasing this behavior can be seen from the consumption patterns of people who start wanting environmentally friendly products. This paper examines the impact of factor environmental concern, product price, social influence, product awareness which influence consumer purchase intention during the covid-19 in India ecological goods conditions. The hypotheses are test based on secondary data information. The result is found that all these factors have influence on the green purchase decision of environmentally friendly product, but the most influential factor is the environmental concern, which is most influence on the purchasing decision of environmentally friendly products.
Keywords: green purchase decision, environmentally friendly product, COVID-19, environmental concern, product awareness, social influence.

MBA107: DIGITAL PAYEMENT AND ITS EFFECTS IN INDIAN BUSINESS

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Abstract: A booklet on Digital Payments was prepared by NITI Aayog and released in July 2017. The 2018 edition of the booklet is the second annual edition of the aforesaid booklet.

Primary objective of the booklet was to provide relevant data on the growth of digital payments so that policy makers can monitor the progress of digital payments in the country. The booklet inter-alia dealt with legal definition of digital payments as provided under the Payment and Settlement Act, growth trends in digital payments and issues relating to charges and challenges for collecting and disseminating disaggregated data The Payment and Settlement Act, 2007 has defined Digital Payments. As per this any "electronic funds transfer" means any transfer of funds which is initiated by a person by way of instruction, authorization or order to a bank to debit or credit an account maintained with that bank through electronic means and includes point of sale transfers; automated teller machine transactions, direct deposits or withdrawal of funds, transfers initiated by telephone, internet and, card payment. Here in study provides the changes in market before and after digital payments initiated.

Keywords: digital payments, fund transfer, internet

MBA108: Agriculture-Information systems adaptation phenomenon of small farmers in India

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Abstract: Small farmers in India have lots of constraints with regard to socioeconomic conditions. Due to liberalization and globalization outlook of the government's policy had brought lots of changes in the market. The governments had initiated various efforts for the centralized agriculture information system. The paper attempts to check the phenomenology of the agriculture information system adoption.

EEE101: A Review on Design and Development of Electric Bicycle (Bike) for Agricultural Application Using Non-Renewable Energy Source.

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Abstract: The proposed work is to design an E-bicycle (E-bike) using non-conventional energy sources such as solar, wind, etc., and implement of E-bicycle for agricultural applications like seeding, weeding, fertilizer spraying, etc. The usage of tractors for irrigation throughout the world is increasing day by day in an agricultural field. The increased use of non-renewable fossil fuels causes acid rain, eutrophication (excessive nutrients that can harm aquatic ecosystems by lowering oxygen levels), damage to crops and forests, and harm to wildlife. To overcome the problem of dependence on oil, a vast amount of money is being spent on the development of electrical vehicles (EVs). Maximum power point tracking (MPPT) or sometimes just power point tracking (PPT) is a technique used with variable power sources to maximize energy extraction as conditions vary. The proposed work is to design a simple, cost-effective model of an electrical bicycle with an intelligent control system (ICS) and implement it for agricultural applications.

Keywords: E-bicycle (bike), MPPT (Maximum Power Point Tracking), ICS (Intelligent

Control System).

EEE102: A Review on Design and Development of Bidirectional DC-DC (BDC) Converter

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Abstract: DC to DC converter is a converter which converts a fixed input DC voltage to variable DC output or a fixed DC output of different magnitude (which can be lower or higher) than input value. Dc to Dc converters is classified into three basic types based on input and output voltage levels. The buck converters are used to convert the high input voltage to low output voltage. The boost converters are used to convert the lower input voltage to higher output voltage. In buck boost converter, the output can be maintained higher or lower, which depends on the source voltage. When the source voltage is high then output voltage is low and source voltage is low then output voltage is high. A Unidirectional DC-DC converter which does not use multiple insulated power supplies. Bidirectional dc to dc converter work in both buck and boost mode and can manage the flow of power in both direction between two dc sources and load. DC-DC converters are from the most important power electronic converters with a vast application in high power fuel cell, solar cell and battery applications where high-power density, high efficiency, high reliability and lightweight power converters are needed. Bidirectional Dc to Dc converter module describes a zero voltage zero current switching (ZVZCS) bidirectional. BDC module has the advantage of high efficiency, high power density and isolation. These advantages make the BDC promising for medium and high-power fuel cell, solar cell and battery applications where high-power density, high efficiency, high reliability and lightweight power converters are needed.

Keywords: DC-DC Converter, Zero voltage Switch, Zero Current Switch.

EEE103: Power Electronics and Motor Drives in Electric, Hybrid Electric and Plug-In Hybrid Electric Vehicles with performance

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Abstract: With increasing concern over the environment and ever-stringent emissions regulations, the electric vehicle has been investigated as an alternative form of transportation. However, the electric vehicle suffers from relatively short range and long charging times and consequently has not become an acceptable solution to the automotive consumer. The addition of an internal combustion engine to extend the range of the electric vehicle is one method of exploiting the high efficiency and lack of emissions of the electric vehicle while retaining the range and convenient refueling times of a conventional gasoline powered vehicle. The term that describes this type of vehicle is a hybrid electric vehicle. Many configurations of hybrid electric vehicles have been designed and implemented, namely the series, parallel and power-split configurations. This paper describes parallel hybrid electric vehicles that are battery dominant and have the ability to externally recharge from the wall socket. Both component selection and control strategy are discussed. Additionally, a definition of the degree of hybridization or a description of the relative size of the electric motor to the internal combustion

engine is presented. Finally, the discussion will illustrate that an increasing degree of hybridization leads to higher overall vehicle efficiency, namely fuel and energy economy The requirements for reducing emissions and improving fuel economy, automotive companies are developing electric, hybrid electric and plug-in hybrid electric vehicles. Power electronics is an enabling technology for the development of these environmentally friendlier vehicles and implementing the advanced electrical architectures to meet the demands for increased electric loads. In this paper, a brief review of the current trends and future vehicle strategies and the function of power electronic subsystems are described. The requirements of power electronic components and electric motor drives for the successful development of these vehicles are also presented.

Keywords: Hybrid Electrical Vehicle, nickel metal hydride vehicles, parallel series HEV, plug- in hybrid vehicles, power electronics devices.

EEE104: DVR Based Hybrid FUZZY Logic Controller for Mitigation of voltage sag/swell

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Abstract: Now a days many industries are using non-conventional energy sources to generate huge amount of power/electricity, as these are non-pollutant. But connecting Wind Turbine to the power system or grid may lead in power quality problems like voltage sag/swell, flicker, harmonics, inter harmonics etc. The DVR is one of the Custom Power Devices which is used to mitigate voltage sag/swell [1]. Sag is more critical issue than swell. In this paper sag and harmonic problems has been addressed. It demonstrates that how DVR injects voltage to compensate sag and reduces harmonics during fault. Here performance of DVR with PI controller, FUZZY Controller and Hybrid FUZZY Logic Controller has been compared. The demonstration is done in MATLAB /SIMULINK.

Keywords: Custom Power Device, Dynamic Voltage Restorer, Power Quality, Wind Turbine, Fuzzy Logic Controller, MATLAB SIMULINK.

EEE105: POWER QUALITY MAINATANCE IN WIND FARM BY FACTS DEVICES

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Abstract: In the power system, the pattern of wind energy is expanding now a day furthermore system operations are vital. Due to voltage changes supplied by renewable energy sources, it is a vital to keep up power quality in power system with existing advancements. The power flow equalization among wind farm changes because of voltage vacillations, this consequences for concerned security system. This work is worried with consequences for protection system because of wind energy into grid, with help of FACTS devices. Here just Thyristor Controlled Series Capacitor (TCSC), Static Synchronous Compensator (STATCOM) and Static Synchronous Series Compensator (SSSC) are concentrated on and thought about effect of these devices upon wind power plant protection system. Simulation results will be exhibited, which demonstrate that relay has disparate answer for TCSC. STATCOM and SSSC, among these STATCOM response much speedier than TCSC and SSSC while managing the power system state stability.

Keywords: Power quality, wind energy, FACTS, protection.

EEE106: SMART SHOPPING TROLLEY BASED ON RFID

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Abstract: In the present-day shopping system, one of the difficulties is to follow the queue through the billing process which is time-consuming. Hence this project aims to reduce the average time spent by the customer at the shopping mall by implementing an automatic billing system using RFID technology. The main aim of the project is to satisfy the customer and to reduce the time spent on the billing process which is to complete the billing process in the trolley rather than waiting in a queue even for one or two products. The customers must add the products after a short scan in the trolley and when the shopping is done the finalized amount will be displayed in the trolley. A customer could either pay their bill by their pre-recharged customer card provided by the shop. Finally, the whole information will be sent to the central Pc of the shopping mall. The billing counter can at any point of the time inquire about the current items present in the trolley. This will turn out to be very beneficial for the retail stores as more people will enjoy the shopping experience and come more often to shop.

EEE107: Smart Irrigation System: Sugarcane Diseases Detection Using Raspberry-pi

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Abstract: Sugarcane is the one of the most important commercial crops of India. It is widely grown by the formers for their big margin profit. It has lot of by-products. India stands second in the product of sugarcane followed by Brazil. It requires lots of water for their cultivation and it is highly fragile to the diseases like fungal infection. In India it is highly grown in UP. Identification of sugarcane diseases is the key to preventing the losses in the sugarcane products. If proper care is not taken then it causes serious effects on sugarcane plants due to which effects on quality and quantity of sugarcane products. The identification of sugarcane disease through some automatic technique is beneficial it reduces large work of monitoring in big forms of crops. This paper also presents automated irrigation system in this system raspberry pi used as embedded Linux board. The system has sensors network of soil moisture, temperature and humidity sensors. Soil moisture reached particular vale then message send to the owner and automatic water motor ON. If Temperature and humidity reach particular vale then owner make pesticide motor ON or OFF on his smart phone or on web page.
Keywords: Raspberry Pi (Rpi); Sensors; Web camera; Web Design; Irrigation; sugarcane Leaf disease detection; Open CV; Qt; pesticide spray.

EEE108: Direct Torque Control of QBC Inverter fed three phase induction motor drive with reduced flux ripple

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Abstract: This effort deals with closed loop QBC three phase induction motor drive (CLQBCIMD) using Proportional Integral (PI) controller and DTC (Direct Torque Control). This effort proposes DTC for CLQBCTPIMD. To enhance dynamic response, closed loop QBC with three phase induction motor drive with PI & DTC are composed and simulated using MATLAB. The operation & simulation results of CLQBCTPIMD are examined. The simulation consequences of PI and DTC controlled CLQBCTPIMD systems are analyzed interims of time domain parameters like settling time and steady state error and comparison table has been exhibited. The outcomes show that the reaction with DTC is better when compared with the PI controlled CLQBCTPIMD systems.
Keywords: Proportional Integral (PI), DTC (Direct Torque Control), Induction Motor Drive (IMD).

ME101: KITE SPRAYER

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Abstract: To meet the growing needs of the farmers who wish continuously to improve the profitability of their farming by using more efficient materials and machineries. The use of different spraying techniques in agriculture is increasing day by day to growing the importance in increasing the crop yield. It is also one of the best methods to spray the pesticides, fertilizers, etc. To improve the process of crop treatment. The working and parameters of Kite sprayer machine for minimizing the human efforts and increasing productivity of crops.

ME102: Mechanical and wear Properties of Cenosphere reinforced CB60 Based alloy Composites

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Abstract: In the present study, CB60 alloy is reinforced with different percentage of Cenosphere (3%, So/o and 7%) Is fabricated by the liquid metallurgy and studied for a microstructure, mechanical and the wear properties. Microstructure characterization was performed using Optical and Scanning electron microscope. Mechanical properties are studied by conducting hardness and tensile testing. Adhesive wear testing was conducted on pin-on-disc wear testing machine to find out wear rate and later optimized using design of experiments. Fracture surface and wear surface morphology was analysed using SEM.
Keywords: Cenosphere, CB60 alloy, Microstructure, Hardness, Tensile wear.

ME103: A Review on: Test Method for Wear Testing Inconel 625 with a Pin-on-Disk Apparatus

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Abstract: This study was carried out to design and fabricate a cost effective and efficient wear tester (pin on disc) used in the metallurgy research field. Design and calculations were established and the machine was fabricated with well selected materials and components all sourced locally. The performance of the fabricated machine was finally evaluated against a standard wear machine in the Standards Organization using statistical methods and the result showed that the locally fabricated machine is 97% effective.
Keywords: ceramic wear, friction; metal wear, non-abrasive, pin- on- disk; wear, Inconel 625

ME104: A Review on: Material failure by Von-mise's stress and resonance concept

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Abstract: The failure of materials for living and non-living materials or organs is predicted by von mises criteria or distortion energy theory. It also aids in organ transplants or replacement depending on the level of stress considered. Usually, specimen for living material is skeleton body parts of animal is considered. The software platform utilized is 3d cad, Catia v5, fea, hyper mesh & amp; ls dyna used. The von mises is applied to metals, alloys, composite materials etc. when the σ von ≥σ yield material will fail. The design is considered based on FOS or strain concept. Any material or living organ will fail after resonance, which is warning bell while in operation performing Keywords: Musculoskeletal Modeling, Finite element analysis, Fracture mechanics, Von-Mises stress, Deformation, Muscle attachment. Random vibration, Monte, F-scan, Insole Stress. Femur, Computed tomography, Deformation

ME105: Experimental Investigation of Mechanical Properties on Aluminium7079 Reinforced with Tungsten Carbide and Graphite.

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Abstract: The Aluminum based Metal Matrix Composites (MMCs) are producing wide enthusiasm for aviation, vehicle, space, transportation and submerged applications. This is for the most part because of its prevalent and average properties like as light weight, low thickness, high hardness, and high temperature obstruction and erosion opposition. Metal lattice composites are formed by Mixture of at least two materials having unalike highlights. In this present investigation aluminum (Al 7079) as base network metal and tungsten carbide (WC) particulate, fly debris as fortifications. aluminum MMCs are set up by mix throwing process. The Tungsten Carbide particulate was included amounts of 3%, 6% and 9% and graphite was included amount of 2% (consistent) on weight division premise to the condensed metal. The diverse blend sets of composites were set up to investigation Mechanical properties like microstructure, hardness, elasticity and pressure test. Microstructure assessment was conveyed by utilizing optical Microscope to get the scattering of tungsten carbide particulate and graphite in base lattice metal. From the results, it was discovered that the elasticity and the hardness of the readied metal network composites expanded with increment in tungsten carbide (3%) and Gr (2%) content. Micrographs of the examples showed uniform dissemination of tungsten carbide and graphite particles in the base network.
Keywords: Aluminium7079, Tungsten Carbide, Graphite, Hardness, Tensile strength and

Microstructure.

CV101: Soil Nailing

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Abstract: Soil nailing is a soil change system applied as a restorative compute to treat the precarious normal or phony soil slants. In this strategy for slant adjustment, a moderately slim building up component is crashed into the dirt slant. Building up components by and large utilized in this strategy for the most part comprises of HYSD steel bars or steel empty cylinders relying on the prerequisite. A nail is crucial component in soil nailing and assessment of nails (lengths and dispersing) structures the significant pieces of the plan system for soil nailing. It is broadly realized that a nail power, by rubbing or cling to encompassing soil, can diminish the chief strain in soil and thus work on the steadiness and reduction the relocations of the dirt. To analyse the soil under dynamic condition, Plaxis software has been used. The behaviour soil nailing under various conditions for different factors of safety has been analysed and concluded.
Keywords: Soil nailing, Plaxis, Factor of safety, Dynamic analysis, etc.

CV102: DYNAMIC ANALYSIS OF MULTI STOREY BUILDING BY USING ETABS

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Abstract: Dynamic Analysis of Multistorey Building using ETABS" taken as a project work to fulfil the curriculum in Final year B.E. The project is a residential apartment multi-storied building of G+6storey, located in Bangalore. The building plan of G+ 6 Multi story's is taken as typical cross section to understand the analysis and parametric evaluation in exclusive manner. The building plan shall be of 5x5 bays with 5mx5m width, which makes the total built up area of625 Sq.mt. The exposure condition for seismic is taken as Zone II and is taken to be moderate and hence an effective cover and safe bearing capacity of the soil shall be considered accordingly. ETABS represents expanded three- dimensional investigation of building systems. As there are various techniques in ETABS like response spectrum, time history, FEM, pushover analysis and response spectrum methodology shall be used for the analysis in current project. The building shall be designed as a framed structure. Keeping in view the requirement & utility of the building the dead load, live load & other superimposed loads shall be considered for the analysis of the structures in accordance with the specification of IS:456-2000 and IS:875-1987 and for seismic IS 1893-2016. Initially to start with, the given plan was thoroughly read and the various salient features were marked down and it will be considered for the project.
Keywords: FEM, response spectrum, time history, seismic, pushover, ETABS.

CV103: Temporal Assessment of Urban Sprawl and Forestry of Bidar Taluk

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Abstract: Urban sprawl refers to the extent of urbanization, which is a global phenomenon mainly driven by population growth and large-scale migration. In developing countries like India, where the population is over one billion, one-sixth of the world's population, urban sprawl is taking its toll on the natural resources at an alarming pace. Urban planners require information related to the rate of growth, pattern and extent of sprawl to provide basic amenities such as water, sanitation, electricity, etc. In the absence of such information, most of the sprawl areas lack basic infrastructure facilities. Pattern and extent of sprawl could be modelled with the help of spatial and temporal data. GIS and remote sensing data along with collateral data help in analysing the growth, pattern and extent of sprawl. With the spatial and temporal analyses along with Modeling it was possible to identify the pattern of sprawl and subsequently predict the nature of future sprawl. This paper brings out the extent of sprawl taking place over a period of nearly three decades using GIS and Remote Sensing. The study also attempts to describe some of the landscape metrics required for quantifying sprawl. For understanding and modeling this dynamic phenomenon, prominent causative factors are considered.
The satellite applications for effective forest management on a more scientific basis commensuration with the priorities set at state, District and Micro levels studies. The shift in priority of forest management towards ecologically sustainable forest resources management with other land resources call for reliable spatial database with a provision to update and retrieve for management decisions at various levels. The application of satellite data for various priorities & objectives leading to resources assessment have been discussed. The utilization of GIS for data base creation and requirement of forest resources information system involving effective inventory data analysis packages supporting volume yield and cull factor analysis has been discussed in detail. In the study change detection analysis for Bidar taluk has been carried out to show changes in land cover in sense of urbanization and forestry.
Keywords: Urban sprawl, Urbanization, GIS, Remote sensing, urban dynamics, Spatial and temporal analyses, Modeling

CV104: Estimation of Surface Rainfall Runoff using CN method and recommendation for site suitability for Ground Water Recharge of Bidar Taluk

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Abstract: Rainfall is the primary source of water for ground water recharge and it's also a primary source of surface water to runoff. As we know in India huge amount rain water flow to the river and that river dissolve to oceans results in large amount of fresh water loss to oceans. Bidar taluk is consider as one of drought prone region with two different type of soils such as laterite and basalt having lower ground water table, low infiltration of rain water and uneven rainfall, so estimation of total rainfall runoff and rain water harvesting is important parameter for this taluk. The main objectives of this work are to generate various types of hydrological maps of Bidar taluk such as Digital elevation model (DEM), flow accumulation, flow direction, flow length, streams, drainages, watershed boundaries, hydrological soil maps, land use and land cover map, along with rainfall runoff map. And most important objective of the project is to identify site suitability for rain water harvesting such as identifying site suitable for recommendation for construction of check dams over drains, open pits, trench cum bund

(TCB) and drill holes for ground water recharge using Geographical Information System (GIS) techniques.

Geographical Information System (GIS) is an important technique for analysing useful and important tool in field of hydrology to study and manage water resources in earth surface. In this project the surface rainfall runoff with the help of GIS is calculated using Curve Number (CN) method for Bidar Taluk whereas this method is useful for estimating the volume of runoff from the land surface which meets into the Manjra River or local streams. We are expecting some gallons of fresh water to get runoff from Bidar taluka resulting in major soil loss as well as formation of gullies or drains for movement of rain water. So, identifying those sites and recommendation for construction of Check Dams, Trench cum Bunds (TCB), Open recharge pit, recharge wells, farm pond.

Keywords: Rainfall, Surface Rainfall Runoff, GIS, Hydrological soil, Manjra River, Check Dam, TCB, Farm, pond.

CV105: USING COCONUTSHELL AND CEMENT COMPARATIVE STUDY OF BC SOIL AND LATERITE SOIL

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Abstract: This paper examined the geotechnical properties of lateritic soils and black cotton soil modified with coconut shell and cement with a view to obtaining a cheaper and effective road stabilizer. After collecting samples from three different borrow pits meant for road construction works, we performed preliminary tests on them for identification and classification purposes, followed by the consistency limit tests. We also performed engineering property tests (Compaction and Unconfined compressive strength) both at the stabilized and unstabilized states with the addition of 1, 3, 5 and 7% coconut shell and cement contents. The results showed that the soil samples were well graded sand with good to excellent rating as sub grade material for pavement construction. However, the engineering properties of the samples were further improved with the addition of coconut shell and cement contents. We obtained optimum values of maximum dry densities (MDD) increases with increase in percentage of additives. The unconfined compressive strength of soil also increases at different percent of additives as we increase the percentage of admixtures. We therefore concluded that coconut shell and husk ash have a good potential for improving the geotechnical properties of lateritic soils.

Keywords: BC SOIL, LATERITE SOIL, COCONUT SHELL, CEMENT, UCS, COMPACTION

CV106: To Study Stabilization of Black Cotton Soil by Using Hydrated Lime and Saw Dust Ash

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Abstract: As indicated by Krebs the regur soil is basically a cultivated soil which has been set up by help and environment as opposed to by a specific kind of rock. Faint cotton soils hold water emphatically, develop, and become delicate and free strength. These ashes are suitably compressible when wet and tends to hurl during wet condition. Faint cotton soils contract in volume and develop breaks during summer. They are portrayed by fantastic hardness and breaks when dry. These properties make them vulnerable establishment soils and earth improvement material. For empowering a good and outrageous street network in dull cotton soil regions, soils will be appropriately seen. BC soils are inorganic muds of medium to high

compressibility and development a basic soil group in India. Dim cotton soil has a verifiable level of soil, which is predominantly montmorillonite in arrangement and faint or blackish weak in covering. By goodness of its high widening and shrinkage credits, the dull cotton soil has been a test to geotechnical and road engineers. The wetting and draying measure causes vertical progression in the dirt mass which prompts frustration of a dark top, as settlement, significant pain, breaking and awkwardness.

CV107: TO ANALYZE THE STANDARD PROCTOR TEST ON BLACK COTTON SOIL STABILISATION USING SOME CHEMICALS USED FOR ROAD BUILDING

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Abstract: The black cotton soil is a form of soil that expands rapidly and begins to inflate when it gets moist. Because of this, the soils strength and several other attributes are severely lacking. With varied quiet stabilizers, expansive soil behaves in an unexpected way. Soil stabilization is also a method for treating soil in order to care for, change, or enhance soil performance. In this study we have discussed about the stabilization, need for stabilization, black cottons oil, properties of black cotton soil, Terrazyme as a B.C soil stabilizer in road construction, standard proctor test for soil which conclude that in addition to reducing swelling, Hypo sludge and Terrazyme strengthen black cotton soil, making it an excellent Sub-base for a road pavement construction.
Keywords: Black cotton soil, stabilize, standard proctor, road building

CV108: PUSHOVER ANALYSIS OF SLOPING GROUND RC-BUILDINGS

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Abstract: In the present scenario, most of the buildings are often Constructed on sloping ground due to increase in population and expansion of cities there is a lack of plane Ground, since the behavior of building on sloping ground During earthquake depends upon distribution of stiffness and mass in vertical and horizontal plane, both of which vary in case of building resting on sloping ground. This paper presents an overview performance of sloping ground building subjected to Pushover analysis as assessed in ATC-40 and FEMA-356. The analysis is carried out by Pushover analysis using ETABS software. The dynamic properties like Base shear, Roof displacement, Mode shapes, Fundamental natural periods, Ductility ratio and Hinge status induced in the building models have been studied to check performance of the building.
Keywords: Base shear, Roof displacement, Fundamental natural period, Ductility ratio and Hinge status.

CV109: COMPARATIVE STUDY ON CONCRETE BEAM WITH AND WITHOUT FIBER UNDER FLEXURE

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Abstract: An experimental investigation of the behaviour of concrete beams reinforced with conventional steel bars and steel fibers and subjected to flexural loading is presented. An experimental program consisting of tests on steel fiber reinforced concrete (SFRC) beams with conventional reinforcement and reinforced concrete (RC) beams was conducted under flexural loading. SFRC beams include two types of beams containing steel fibers in two different volume fractions i.e., one percent and 1.5 percent. The cross-sectional dimensions and span of beams were fixed same for all types of beams. The dimensions of the beams were 125mm x 150mm x11000mm.Tests on conventionally reinforced concrete beam beams showed enhanced properties compared to that of RC beams. The ultimate loads obtained in the experimental investigation were also compared with the theoretical loads for all types of beams specimens, containing steel fibers in different proportions, have been conducted to establish load –deflection curves. The various parameters, such as, first crack load service load ultimate load, of beams with and without steel fibres have been carried out and a quantitative comparison was made on significant stages of loading.
Keywords: SFRC beams, RC beams, Steel fibres, Flexural loading.

MA101: Split Domination in Lict Subdivision Graph of a Graph

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Abstract: For any graph, the Lict subdivision dominating set is a Split Lict subdivision dominating set, in the event that the subgraph is disconnected. The least cardinality of vertices in such a set denotes the Split Lict subdivision domination number in or Split domination in Lict subdivision graph of a graph and is represented by. We study the graph theoretic properties of and many bounds were obtained in terms of the various components of and it was also discovered how it related to other domination parameters.